C. Entry of Amendment Under 37 C.F.R. §1.116

If finality is not withdrawn, Applicants request entry of this Rule 116 Response because:

(a) it is believed that the amendment of the pending claims and the addition of only dependent claims puts this application into condition for allowance;

(b) the amendments were not earlier presented because the Applicants believed in good faith that the cited prior art did not disclose the present invention as previously claimed, and the newly cited art in the present rejection was not earlier presented by the Examiner;

(c) the amendment of the claims and addition of the new dependent claims should not entail any further search by the Examiner since no new features are being added or no new issues are being raised: the amendment of the independent claims merely involves features previously recited in now-canceled claims 18 and 25; and

(d) the amendments and new claims do not significantly alter the scope of the claims and place the application at least into a better form for purposes of appeal.

D. Rejection Under 35 U.S.C. §102

Claims 1-6 (?), 8-12, 16, 19, 20, 22, 24 and 25 (?) are rejected as being anticipated by Michalak et al., U.S. Patent No. 5,835,006.

Claims 2, 4, and 5 were canceled in the last response, so the rejection thereof is moot. As the claim language recited in numbered paragraph 4 of the Office Action relates to independent claim 26, and not dependent claim 25, it is understood that claim 26 is rejected in numbered paragraph 4, not 25. It is believed that Examiner Addison confirmed this understanding during the interview.

Part of the subject matter of claims 18 and 25, i.e., the "small case body", has been added to each of the rejected independent claims 1, 8, 10 and 26. As claims 18 and 25 were not rejected as being anticipated by Michalak et al. (see page 4, lines 1-3 of the Action), it is submitted that amended claims 1, 8, 10 and 26, and any remaining claims depending therefrom, also should not be anticipated.

Further, the independent claims 1, 8, 10 and 26 have each been amended to recite a direct connection between the large case body and the first electrode, and between the small case body and the second electrode, a suggestion made by Examiner Tamai.

E. Rejection Under 35 U.S.C. §103

Claims 14-15(?), 17, 18, 21, 23 and 25 are rejected as being made obvious by the combination of Michalak et al. and Mabuchi et al., U.S. Patent No. 5,343,102.

Claim 15 was cancelled in the last Response, so the rejection thereof is moot, as was confirmed during the interview.

For the following reasons, it is respectfully submitted that claims 14, 17, 18, 21, 23, and 25, as well as new claims 27-38, were not rendered obvious by the cited art

As noted above, part of the subject matter of claims 18 and 25, the small case body, as well as a direct connection between the large case body and the first electrode, and between the small case body and the second electrode, has been added to claims 1, 8 and 10, from which these rejected claims depend.

Dependent claims 14 and 23 recite a button-type battery, dependent claims 17 and 23, recite the communtator and contact springs, and claims 18 and 25 now recite the recess portions described at page 9, lines 18-25 for connecting the large and small cases.

Michalak et al. relates to a cell phone vibrator assembly 126 with two conductive portions 212 and 214 that connect to a motor 206 and to a pair of clips 202 and 204. The electrodes appear to be members 400, 402 (See Fig. 4), which are positioned at the cylindrical case 308. Michalak et al. thus fails to teach or suggest at least amended claims 1's, 8's or 10's recitation of "a large case body having a cylindrical conductive portion directly electrically connected to the first electrode terminal" and "a small case body, connected to the second electrode terminal".

With the present invention, only the second end of the second electrode terminal (41) and one portion of the rotary shaft (30) project form the large case body (20) and the small case body (40). Accordingly, the motor (1) of the present invention can be made shorter than the prior art. For example, in the direction of the rotary shaft (30), although the motor of Michalak et al. comprises conductor portions (300, 302), it is relatively longer. As a result, according to the present invention, when the motor (1) is incorporated in an apparatus, it is possible to exchange the motor easily.

It is respectfully submitted that, regardless of Mabuchi et al.'s teaching regarding the commentator and contact springs, it fails to compensate for the above-discussed inadequate teaching of Michalak et al.

Also, as noted above, the large case body of the present invention directly electrically contacts the first electrode terminal, and the small case body directly contacts the second

electrode terminal. In Mabuchi et al., like Michalak et al., the case cover 7 has both electrodes 5. See Fig. 7.

As recited in new claims 27, 30, 33 and 36, the second electrode terminal (41) is connected to the small case body/end case (40) so as to pass therethrough.

New claims 28, 31, 34 and 37 recite that the motor unit further comprises a rotary shaft (30), a commutator (35) and a contact spring (44), and the second electrode terminal (41) passes through the small case body (40) at a distance from the rotary shaft (30), and includes a first end which is contained in the small case body (40) and is electrically connected to the commutator (35) through the contact spring (44), and a second end, which projects from the small case body (40), and forms one of positive and negative electrode terminals.

Finally, according to new claims 29, 32, 35 and 38 the second end of the second electrode terminal (41), which projects from the small case body (40) of the second electrode terminal (41), is bent to form a curved contact head.

III. CONCLUSION

In view of the foregoing actions taken by Applicants, it is believed this Rule 116 Response places this application in condition for allowance, and therefore should be entered, and a Notice of Allowance issued for these claims.

If there are any remaining formal matters that need to be attended to in this application, it is requested that the Examiner contact the undersigned attorney at the below-identified telephone number at the Examiner's convenience.

If any additional fee is required in connection with the filing of this Response, please charge same to our Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

Date: 8/9/02

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE WRITTEN DESCRIPTION:

On page 8, second full paragraph, please amend as follows:

The completed rotor 3 comprises a core 31 attached to a rotary shaft 30, a driving coil 32 wound around the core 31, a sleeve 33 and a thrust ring 34 which are disposed in an end side on the rotary shaft 30 for sandwiching the core 31, and a commutator 35 and oil cutter 36 which are disposed in the other end side on the rotary shaft 30, as shown in FIG. 4. The commutator 35 comprises a central member 35a and commutator pieces 35b, 35b and 35b which are attached to the central member 35a.

On page 8, third full paragraph, please amend as follows:

The small case assembly 4 comprises a small case body 40 which is fitted into the opening 20a of the large case body 20 to [cover] close the large case body 20, as shown in FIG. 5. The small case body 40 is made of an insulating material.

On page 12, last paragraph extending over to page 13, please amend as follows:

The fifth embodiment of the attachment structure for attaching the motor 1 to the button type battery B is shown in FIG. 12. In this embodiment, the motor 1 is attached to the button type battery B so that the end surface of the negative electrode of the battery B faces [to] the peripheral surface of the large case body 20 of the motor 1 through a conductive member 56. The end surface of the negative electrode of the battery B is connected to the peripheral surface of the large case body 20 of the motor 1 through a conductive member 56. An end of the conductive member [54] 56 is bent and folded to connect to the end surface of the negative electrode of the battery B and the other end of the conductive member 56 has a U-shaped or arch-shaped surface to fit [to] the curvature of the peripheral surface of the large case body 20 of the motor 1 so as to increase the contact area with the large case body 20. On the other hand, the positive electrode surface of the battery B is electrically connected to the positive terminal (the first conductive piece) 41 of the motor 1 through a conductive member 57 which has an L-shape as a whole. The reference numeral 58 denotes a motor [cramp] clamp for

[cramping] clamping the motor.

On page 13, last paragraph, please amend as follows:

The sixth embodiment of the attachment structure for attaching the motor 1 to the button type battery B is shown in FIG. 13. This embodiment is almost the same as the fifth embodiment of FIG. 12 except the point that the negative electrode surface of the battery B is electrically connected to the upper peripheral surface of the large case body 20 of the motor 1 directly. According to the attachment structure, because the motor 1 can be [cramped] clamped by a conductive member 56, a specific motor [cramp] clamp is not required.

On page 14, first paragraph, please amend as follows:

According to the attachment structure of each of the above-described [each embodiment] embodiments, because the button type battery B is electrically connected to the motor 1, through a conductive member or directly, it is possible to cut off the electrical connection by moving any one of the button type battery, motor, and the conductive member.

On page 14, second paragraph, please amend as follows:

It should also be understood that the present invention is not limited to the embodiments as [the] above described and various changes and modifications may be made to the invention without departing from the gist thereof.

IN THE CLAIMS:

Please AMEND claims 1, 3, 6, 8-12, 14 and 16-26 as follows:

1. (TWICE AMENDED) A motor, comprising:

a motor unit having [a pair of] first and second electrode terminals; and

a cylindrical case for covering and securing the motor unit, [wherein the case comprises a first] including a large case body having a cylindrical conductive portion which is directly electrically connected to [one of] the first electrode terminal[s], and a small case body directly connected to the second electrode terminal.

3. (TWICE AMENDED) The motor as claimed in claim 1, wherein the [cylindrical case] small case body further comprises a second conductive portion which is electrically separated from the first cylindrical conductive portion and is connected to the [other of the] second electrode terminal[s].

6. (TWICE AMENDED) The motor as claimed in claim 3, wherein the second conductive portion is located on an end surface of the small case body.

8. (TWICE AMENDED) An attachment structure for attaching a motor to a battery, comprising:

a motor [comprising] including a motor unit having [a pair of] first and second electrode terminals and a cylindrical case for covering and securing the motor unit,

wherein the cylindrical case [comprises a first] includes a large case body having a cylindrical conductive portion which is directly electrically connected to [one of] the first electrode terminal[s], and a small case body directly connected to the second electrode terminal; and

a battery for driving the motor[:],

wherein the [cylindrical conductive portion connected to the one of the] first and second electrode terminals of the motor [and the other of the electrode terminals], are each connected to corresponding electrodes of the battery through only conductive members, respectively.

9. (TWICE AMENDED) [An] The attachment structure as claimed in claim 8, wherein the small case body further comprises a second conductive portion which is electrically separated from the [first] cylindrical conductive portion and is connected to the [other of the] second electrode terminal[s], and the second conductive portion is connected to a corresponding electrode of the battery through only a conductive member.

10. (TWICE AMENDED) An attachment structure for attaching a motor to a battery, comprising:

a motor [comprising] including a motor unit having [a pair of] first and second electrode terminals and a cylindrical case for covering and securing the motor unit,

wherein the cylindrical case [comprises a first] includes a large case body having a cylindrical conductive portion which is directly electrically connected to [is connected to one of] the [two] first electrode terminal, and a small case body directly connected to the second

electrode terminal; and

a battery for driving the motor[;],

wherein the second electrode terminal of the motor is connected to a first electrode of the battery through only a conductive member, and the [cylindrical conductive portion] large case body is connected to a [corresponding] second electrode of the battery directly.

11. (TWICE AMENDED) The attachment structure as claimed in claim 10, wherein the small case body further comprises a second conductive portion which is electrically separated from the first cylindrical conductive portion and is connected to the second electrode terminal, and one of the first cylindrical conductive portion and the second conductive portion is connected to a corresponding electrode of the battery through only a conductive member, and the other of the cylindrical conductive portion and the second conductive portion is connected to a corresponding electrode of the battery directly.

12. (TWICE AMENDED) The attachment structure as claimed in claim 8, wherein [at least one of] the conductive members can be brought into contact with or away from the battery or the motor.

14. (ONCE AMENDED) The attachment structure as claimed in claim 8, wherein the battery is a button-type [one].

16. (ONCE AMENDED) The motor as claimed in claim 3, wherein the second conductive portion forms a cylindrical portion other than the cylindrical conductive portion of the large case body.

17. (ONCE AMENDED) The motor as claimed in claim 1, wherein the motor unit further comprises a commutator and contact springs, and the first and second electrode terminals of the motor are electrically connected to the commutator through the contact springs.

18. (ONCE AMENDED) The motor as claimed in claim 1, wherein the [cylindrical case further comprises a] large case body and [a] the small case body[, which] comprise recess portions for [positioning the motor] connecting the large and small case bodies.

19. (ONCE AMENDED) The [motor] attachment structure as claimed in claim 9, wherein the second conductive portion is located on an end surface of the small case body.

20. (ONCE AMENDED) The [motor] attachment structure as claimed in claim 9, wherein the second conductive portion forms a cylindrical portion other than the cylindrical conductive portion of the large case body.

21. (ONCE AMENDED) The [motor] attachment structure as claimed in claim 8, wherein the motor unit further comprises a commutator and contact springs, and the first and second electrode terminals of the motor are electrically connected to the commutator through the contact springs.

22. (ONCE AMENDED) The attachment structure as claimed in claim 10, wherein the [at least one of] conductive members can be brought into contact with or away from the battery or the motor.

23. (ONCE AMENDED) The attachment structure as claimed in claim 10, wherein the battery is a button-type [one].

24. (ONCE AMENDED) The [motor] attachment structure as claimed in claim 11, wherein the second conductive portion is located on an end surface of the small case body.

25. (ONCE AMENDED) The [motor] attachment structure as claimed in claim 10, wherein the [cylindrical case further comprises a] large case body and [a] the small case body[, which] comprise recess portions for [positioning the motor] connecting the large and small case bodies.

26. (ONCE AMENDED) A motor, comprising:

a rotor [with a first electrical terminal at a first end and a second electrical terminal at a second end; and];

a cylindrical case for covering and securing the [motor unit, with] rotor, including a [first] cylindrical conductive portion electrically connected to the rotor and directly connected to [the] a first electrical terminal of the motor, and an end case electrically connected to the rotor and directly connected to a second electrical terminal.